

OP. 3100.2.257  
OP. 2100.2.062 (19)



MINISTRY OF  
AGRICULTURE, FISHERIES AND FOOD



## FOOD STANDARDS COMMITTEE

### REPORT ON MEAT PIES



*LONDON*  
HER MAJESTY'S STATIONERY OFFICE  
1963  
PRICE: 1s. 6d. NET

## FOOD STANDARDS COMMITTEE

The terms of reference of the Food Standards Committee are:

To advise the Secretary of State for Scotland, the Minister of Agriculture, Fisheries and Food, the Minister of Health, and as respects Northern Ireland the Secretary of State for the Home Department, on the composition, description, labelling and advertising of food with particular reference to the exercise of the powers conferred on Ministers by Sections 4, 5 and 7 of the Food and Drugs Act, 1955, and the corresponding provisions in enactments relating to Scotland and Northern Ireland.

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# FOOD STANDARDS COMMITTEE

## REPORT ON MEAT PIES

### Remit

1. We were asked to consider the need for and practicability of standards for meat pies. Our study of this problem has proved long and complicated. When Ministers rejected our recommendations on standards for sausages, we enquired whether they wished us to continue our work on meat pies since meat pies and sausages are in many ways cognate products. We also pointed out the problems that were likely to arise in devising a fully enforceable standard and added that we thought it would be essential to obtain further information from food and drugs authorities about the actual composition of the various types of meat pie at present offered for sale. The Ministers told us that we should proceed with the remit they had given us and obtain whatever further information we considered necessary.

### Information received from Food and Drugs Authorities

2. Food and drugs authorities were asked to sample a representative number of meat pies collected during the first six months of 1960. They were asked to return the price of the pie and the weight of the pastry, the jelly, if any, and the filling. They were also asked to return the percentage meat content of the filling divided into fat and lean and the meat content of the pie as a whole, also divided into fat and lean. A tabular statement of the returns is at Appendix 1. Although these returns were not produced as part of a complete statistical experiment, they do show a very wide range of meat contents at all prices and weights. There seems to be no clear correlation between price and meat contents and some of the meat contents are very low indeed.

### The need for standards

3. Quite apart from these returns, there have been for a number of years fairly continuous complaints from enforcement authorities and members of the public about the low meat content of many meat pies. On the face of it, this is a product for which a standard of composition is eminently desirable. Meat pies are sold under a number of different names and frequently under no name at all. The purchaser has no indication before he buys the pie of what the meat content is going to be; it may be anything from under 10 per cent to over 50 per cent. Since the filling is often a homogeneous mixture of meat and cereal, it may be impossible to assess by eye the amount of meat present. The purchaser's power of exercising choice is very limited; he may go elsewhere and be presented with another almost identical pie but, as it is often unmarked and unwrapped and therefore carries no indication of what sort of pie it is or of who is the manufacturer, he will not be aware that he has bought the same sort of pie again until he starts to eat it. Further, pies are often sold in large quantities on public occasions such as football matches. Here the only choice the public has is to take the one type of pie offered or to go without. Pies are frequently eaten as part of a main meal or as the main constituent of high tea and do therefore form a not negligible part of the diet of many people.

4. It has been represented to us that competition is in itself enough to ensure reasonable standards for meat pies, that if pies of a low meat content are being sold it must be because they are what the public want; if there were no demand for such pies, they would not be produced. It has further been suggested that the product known as a meat pie is in fact a farinaceous article and the meat is only present in order to give flavour.

5. We are not impressed by these arguments. For the reasons already mentioned we are satisfied that this is a case where the consumer is not protected by the free play of competition and one where he cannot make his preferences felt effectively. Though a number of producers' organisations have asserted in their evidence that there is a demand for meat pies with a very low meat content, all the evidence we have received from sources not immediately concerned with the production of meat pies has tended to suggest that far from demanding such pies, consumers generally are astonished to learn that they are being produced at all. As to products known as meat pies being regarded as farinaceous articles, we think that they must clearly also contain a substantial amount of meat.

6. We therefore consider that a standard for meat pies is highly desirable, provided it can be achieved and enforced.

#### Enforcement of standards

7. The main problem with regard to enforcement is the analytical one, since the chemical analysis of a meat pie presents considerable difficulties. To determine the proportion of meat in the total weight of the pie, it is not satisfactory simply to separate the filling from the pastry case. During cooking, fat from the meat filling may be absorbed by the pastry. The proportion of fat thus transferred can vary widely according to the type and quality of the meat used and the type of pastry and up to 60 per cent of the fat in the meat may be absorbed in this way. It has been stated that occasionally some of the fat from the piecrust may be transferred to the filling.

8. One possible method of avoiding the consequent difficulties would be to express any standard in terms of the proportion of uncooked lean meat in the whole pie, some allowance being made for the impossibility of completely separating fat from lean meat.

9. A lean meat standard has the advantage of simplicity and ease of operation, but it has a number of disadvantages. In many cases it would be impossible for the pie maker to know the precise lean meat content of the meat he obtains from the butcher and it may be very difficult indeed for the butcher to tell him. The actual fat content of what would be regarded as "lean meat" varies considerably for different types and cuts of meat and at different times of year. Furthermore, there is no inherent objection to using some fat meat in pies and the preference for the amount of fat may vary. It does not seem right that fat should be excluded from the calculation of meat for the purpose of conforming to the standard. Furthermore, a lean meat standard might confuse consumers as to the true composition of pies. A pie might only just conform to a lean meat standard of, say, 15 per cent and yet have an actual meat content of 30 per cent or more. We therefore conclude that a standard based on total meat content is preferable.

10. We are of the opinion that a standard of total meat content can be enforced with reasonable accuracy and in such a way as to prevent the manufacturer who is doing all that can be reasonably expected to comply with the standard being put in jeopardy. The basic standard should be expressed in terms of a minimum percentage content of raw meat. In calculating the meat content, the amount of meat in the filling should first be determined. If there is an apparent deficiency, the pastry should be analysed and the excess of fat above a prescribed ratio of fat to carbohydrate credited to the meat. This method, although it will not in every case produce an absolutely accurate result, should be sufficiently accurate to avoid any real injustices.

11. A further safeguard is needed to take account of the varying weights of pies due to almost unavoidable variations in the process of manufacture and

in baking. A pie maker normally aims at making pies of between  $2\frac{1}{2}$  and 3 ounces or between 4 and 5 ounces but he will not be able to turn out pies of exactly constant weight, however hard he tries, because of variations in the weight of the pastry and variable losses in baking. The best course would seem to be to accept, at least for the smaller pies, that the standard has been complied with if a fixed weight of meat has been put into the pie even if the weight of the pie is, within certain limits, in excess of that which would allow the pie to comply with the basic percentage meat content standard.

12. Some special provisions with regard to sampling will have to be laid down. We do not think that the method of dividing a single pie into three equal parts as laid down in the Seventh Schedule of the Food and Drugs Act and in the corresponding Scottish provisions would be suitable. It would be virtually impossible to obtain equitable samples by this method. The shape of some pies is such that the proportions of pastry to filling in each of the three samples would be bound to vary. Even with pies of symmetrical shape, the proportions of meat to crust in different sections of the pie would be likely to differ quite markedly. The alternative method of taking three single pies as laid down by Section 97 of the Act (Section 33 of the relative Scottish Act) would only be available for pies when pre-packed and could not be applied to those sold loose without a specific regulation. It is true, of course, that pies do vary in composition even in a single batch and to make sure that the sample was representative a large number of pies would have to be taken. It does seem to us, however, that the advantages gained by taking a large number of pies are outweighed by the disadvantages. The increase in accuracy may not be great and the disruption of the business of a small shopkeeper if, say, twelve of his pies had to be taken for a formal sample, might be considerable. When such a sample of twelve pies was divided into the necessary three groups of four pies each, there would be no guarantee that the variations would average themselves out and thus produce a greater consonance between the three samples. An absolutely satisfactory result is not possible and we think that equally reasonable results would be obtained if the sample consisted of three pies only. This would require a specific regulation under Section 123 of the Food and Drugs Act and the corresponding Scottish provision and we recommend that one should be included in any regulations controlling the composition of meat pies. In making this recommendation, we have borne in mind that though proceedings can only be taken on a formal sample, the standard will apply to every individual pie; the consumer has a right to expect that every pie will conform to the standard and not that pies will conform to it on average with some well below and some well above.

#### **The standard itself**

13. In our view, meat pies should contain not less than 25 per cent meat based on the weight of the pie as a whole. Such a requirement—one ounce of meat in a 4 ounce pie—seems to us a reasonable minimum and the least the consumer has the right to expect. The figures in Appendix I indicate that it is attained by the majority of pies at present produced. We recommend, therefore, that this should be the basic standard with the proviso that the standard shall be deemed to have been complied with if one ounce of meat is present in a pie of not less than 4 ounces and not more than  $5\frac{1}{2}$  ounces, and  $\frac{4}{5}$ ths of an ounce of meat in a pie of up to 3 ounces. This will allow for unavoidable variations of weight in the pie as a whole and will cover the types of pie which are most common (those between  $2\frac{1}{2}$  and 3 ounces and between 4 and 5 ounces) and which are most difficult to produce at an exact weight. We also recommend that in analysing the pastry the excess fat above a ratio of fat to carbohydrate of 60:100 should be credited to the meat. Data relevant to this question will be found in Appendix II.

14. We do not recommend at present, for the reasons we have already stated, that there should be any prescription as to lean meat. However, this is a point that we think should be kept under review particularly as fat is a cheaper ingredient than lean meat, and if there is any tendency for the fat to lean meat ratio in pies to increase the question should be reconsidered.

#### **Application of the standard**

15. The only way to make the standard effective will be to apply it to all pies containing meat. This means in effect that the standard will apply to pies containing meat only, meat and gravy, meat and jelly, meat and cereal, and any combination of these. We think it should also be made clear that it will apply to any pie sold as a meat pie or in such a way as to lead an intending purchaser to believe that he is purchasing a meat pie. We have received evidence that meat pies are sold under a large variety of descriptions not always of the kind which make it clear to the purchaser what he is buying. It seems to us that such pies, if pre-packed, should be labelled meat pies in order to conform to the provisions of Article 4 of the Labelling of Food Order 1953. However, we do not think that it would be right to make a distinction between pre-packed pies and those sold loose and we recommend that regulations should contain a provision that meat pies should be labelled with the description "meat pie" when pre-packed and when sold unpacked they should be marked with a ticket bearing the words "meat pie" either on the pie or in close proximity to it. The actual name of the meat or meats used could be substituted for the word "meat" and the additional ingredients could also be mentioned.

16. We have considered whether any special prescriptions are needed as to the type of meat in a pie, but we are convinced that the analytical difficulties are at present too great and we do not therefore recommend that anything beyond the simple standard of meat content should be laid down. Nevertheless, we do recommend that prohibited offals as defined in the Offals in Meat Products Order, 1953 should not be permitted as ingredients of meat pies.

17. The standard we have proposed is, of course, mainly of importance in relation to the lighter pies, that is those of less than 8 ounces. We have considered whether different standards are required for the heavier pies and for those which use specific names such as "steak pies". It is, of course, true that as the size of the pie increases the meat content is likely to increase since the proportionate volume of the pastry will decrease. Furthermore, the very large pies traditionally have a considerably higher meat content. Again, pies designated as "steak pies" or "pork pies" are generally taken to be superior in meat content to those merely designated "meat pies". While we agree that these assumptions are correct and that the heavier and specially designated pies should have a higher meat content, we are doubtful whether there is any necessity for a specific prescription in regulations. The figures in Appendix I do, however, show that there are occasions when even the larger pies are produced with a very small meat content. We do not therefore think that the heavier pies should be excluded from the standard we propose, but we do not recommend that separate standards should be laid down for the heavier or specially designated pies. If, however, regulations were made in the terms we have recommended and there was subsequently evidence of a decline in the meat content of these special types of pie, we recommend that the introduction of further standards should be considered.

#### **Scottish pies**

18. We received a great many representations, formal and informal, that the typical Scottish meat pie was something totally unlike the sort of meat pie

generally consumed in England, particularly in the south. One view put to us was that the Scots are accustomed to a more farinaceous diet than the English and might actually prefer a pie with only a small amount of meat in it. One witness who gave evidence suggested that the Scottish consumer would be satisfied even if the meat content of a meat pie fell as low as 5 per cent.

19. This view on Scottish preferences—and these were thought also to extend to much of the north of England—was put to us with such force that we felt it necessary to ask for special written evidence from various interests on the nature of the Scottish pie. We took additional oral evidence in London from Scottish pie manufacturers. We also met in Edinburgh and took evidence there from a wide variety of interests, carefully reviewed all the points that had been put before us and tried to look at it primarily from the point of view of the Scottish consumer.

20. There was a weight of evidence from Scottish local authority associations that a standard was necessary. They thought in general that consumers would welcome a pie of higher meat content than they sometimes were sold at present and would not regard a pie with under 10 per cent meat as having a reasonable meat content. It was not easy for us to obtain direct information from consumers themselves, but it is perhaps significant that the one Scottish consumer organisation which gave evidence before us favoured a standard and that we could obtain no confirmation of the view that the Scottish public favoured a pie with a very low meat content.

21. It was also asserted in evidence before us that if a meat content for Scottish pies was fixed at anything like the level we have proposed, it would inevitably lead to an increase in price. We think this very improbable. Pies are at present being produced in Scotland with a meat content of above 25 per cent at the same price as pies with a meat content below 10 per cent. In any event, the cost of the increased proportion of meat would be a small factor in determining the cost of the pie. We do not think, therefore, that the question of cost can be regarded as a major consideration in deciding whether or not standards should be laid down.

22. Our conclusions are as follows. There is a similar wide range of meat content for Scottish pies as there is for English pies, although it is probably true that there are more very low meat content pies produced in Scotland than in England, but this is not necessarily related to consumer preference. In fact, the main difference between English and Scottish pies is that the pastry of a Scottish pie tends to be thinner and softer and this is not relevant to the question of minimum standards of meat content. We therefore recommend that a single standard for meat content should obtain throughout the United Kingdom.

#### **Meat and vegetable pies**

23. We recognise that there is a wide variety of pies and pasties made with meat and various combinations of vegetable. We have no desire to restrict this variety, but we do think that the customer has just as much right to a reasonable quantity of meat in a pie sold as a meat and vegetable pie as in one sold as a meat pie. We therefore consider that any pie sold as a meat and vegetable pie, or under any description which is normally associated with meat and vegetable pies or pasties such as "Cornish pasty" or "Forfar Bridie", should contain at least 12½ per cent total meat calculated on the weight of the meat pie or pastry as a whole. This standard should, of course, also apply to any pie sold in such a way as to lead an intending purchaser to believe that he is purchasing a meat and vegetable pie.

24. We think that all pies conforming to the standard should be labelled when pre-packed "meat and vegetable pie" or with some name traditionally associated with meat and vegetable pies such as "Cornish pasty" or "Forfar Bridie". The actual name or names of the meat used and the name or names of the vegetable used could be substituted for the word "meat" and "vegetables" respectively. When sold unpacked the same phrase should be used on a ticket on the pie or pasty or in close proximity to it.

25. We do not recommend that steps should be taken to prevent the presence of small quantities of meat in what are predominantly vegetable pies. However, we recommend that it should be an offence to describe such pies in any way that does not make it absolutely clear that meat is a subsidiary ingredient. We suggest, therefore, that such pies should always be described either with the name of the vegetable alone or with the name of the vegetable first and should never be allowed to use names which are traditionally associated with meat and vegetable pies of the sort to which we recommend a standard should apply.

#### Summary of Conclusions and Recommendations

26. (a) A minimum meat content of 25 per cent should be laid down with the proviso that the standard should be deemed to have been complied with if one ounce of meat is present in a pie of not less than 4 ounces and not more than  $5\frac{1}{2}$  ounces and  $\frac{4}{5}$ ths of an ounce of meat in a pie of up to 3 ounces (paragraph 13).
- (b) In analysing the pastry of a meat pie, the excess fat above a ratio of fat to carbohydrate of 60:100 should be credited to the meat (paragraph 13).
- (c) The standard should apply to all pies and pasties containing meat, except those containing meat and vegetables, and to all pies sold as meat pies or in such a way as to lead an intending purchaser to believe he is purchasing a meat pie (paragraph 15).
- (d) Pies sold as meat and vegetable pies or under descriptions normally associated with meat and vegetable pies or pasties such as "Cornish pasty" or "Forfar Bridie" or in such a way as to lead an intending purchaser to believe he is purchasing a meat and vegetable pie should contain not less than  $12\frac{1}{2}$  per cent meat (paragraph 23).
- (e) The standard for meat and vegetable pies should not apply to pies which consist of meat and vegetables but which are clearly labelled either with the name of the vegetable alone or the name of the vegetable first (paragraph 25).
- (f) The regulations should include a provision laying down that a formal sample should consist of three pies (paragraph 12).
- (g) The proposed standards should apply throughout the United Kingdom (paragraphs 18-22).
- (h) The need for a prescription as to lean meat should be kept under review (paragraph 14).
- (i) The introduction of further standards for meat pies of over 8 ounces in weight should be considered if there is any evidence of a decline in meat content (paragraph 17).
- (j) No prescriptions as to the type of meat in a meat pie should be made except that prohibited offals as defined in the Offals in Meat Products Order, 1953, should not be permitted as ingredients of a meat pie (paragraph 16).



**PORK PIES**  
(discrete pieces of meat)

Price per 100 grams	No. of Samples	Percentage Meat Content					
		10-15	15-20	20-25	25-30	30-35	35-40
3d.-5d.	5	—	—	2 40%	—	1 20%	—
5d.-7d.	114	—	11 9.6%	24 21.1%	55 48%	17.5%	2.6% 0.9%
7d.-9d.	71	2 2.8%	4 5.6%	12 16.9%	14 19.7%	14 19.7%	22.5% 12.7%
over 9d.	8	—	—	2 25%	1 12.5%	1 12.5%	2 25% 12.5% 12.5%
Totals	198	2 1%	15 8%	40 20%	70 35%	36 18%	22 11% 11% 6% 2% 1%

NOTE: The total number of samples in the Tables A (1)—F (1) do not correspond to the total number of samples in the related Tables A (2)—F (2) because some samples have had to be omitted from one or other of the tables relating to each group on account of the incompleteness of the data furnished. For example, a small number of samples did not show the price and could not be included in Tables A (1)—F (1), while a larger number of samples could not be included in Tables A (2)—F (2) because it was not clear from the returns whether the weight entered was the aggregate or the average of several pies.

**PORK PIES**  
(discrete pieces of meat)

Table A (2)

Weight of pie grams	No. of Samples	Percentage Meat Content						45-50
		10-15	15-20	20-25	25-30	30-35	35-40	
50-100	14	2	21.4%	3	28.6%	4	7.1%	7.1%
100-150	106	—	11	23	44	22	1.9%	4
150-200	28	—	10.3%	21.7%	41.5%	20.8%	3.8%	—
200-250	10	—	—	6	14	5	7.1%	3.6%
250-300	10	—	—	—	20%	30%	40%	—
300-350	3	—	—	8	20%	2	—	—
350-400	2	—	—	33.3%	33.3%	1	—	—
400-450	9	—	—	—	—	—	—	—
450-500	12	—	8.3%	—	16.7%	—	38.3%	—
500-550	2	—	—	—	50%	—	50%	—
over 550	1	—	—	—	—	—	—	—
<b>Totals</b>	<b>197</b>	<b>2</b>	<b>1.5</b>	<b>42</b>	<b>69</b>	<b>34</b>	<b>22</b>	<b>11</b>
								<b>6%</b>
								<b>1%</b>

**PORK PIES**  
(minced meat or solid filling)

Table B (1)

Price per 100 grams	No. of Samples	Percentage Meat Content							
		10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
3d.-5d.	36	1 2.8%	6 16.7%	5 13.9%	17 47.2%	5 13.9%	1 2.8%	1 2.8%	—
5d.-7d.	187	2 1.1%	28 14.9%	51 27.3%	60 32.1%	33 17.6%	11 5.9%	2 1.1%	—
7d.-9d.	185	2 1.1%	10 5.4%	32 17.3%	71 38.4%	45 24.3%	17 9.2%	7 3.8%	—
over 9d.	34	—	—	7 20.3%	16 47.1%	8 23.5%	1 2.9%	—	1 0.5%
<b>Totals</b>	<b>442</b>	<b>5 1%</b>	<b>44 10%</b>	<b>95 22%</b>	<b>164 37%</b>	<b>91 20%</b>	<b>30 7%</b>	<b>10 2%</b>	<b>1 0%</b>
									<b>2 1%</b>

Table B (2)

PORK PIES  
(minced meat or solid filling)

Weight of pie grams	No. of Samples	Percentage Meat Content					
		10-15	15-20	20-25	25-30	30-35	35-40
50-100	22	—	2	9.1%	13	4.5%	9.1%
100-150	206	1	15	44	89	33	15
150-200	35	—	7	22.9%	14	8.6%	8.6%
200-250	8	—	—	25%	62.5%	12.5%	—
250-300	12	—	3	25%	3	16.7%	8.3%
300-350	12	—	—	1	3	41.7%	2
350-400	4	—	—	8.3%	25%	41.7%	16.7%
400-450	7	—	—	—	75%	1	—
450-500	26	—	—	15.4%	14.3%	57.1%	28.6%
500-550	9	—	—	22.2%	11.1%	33.3%	33.3%
over 550	4	—	1	25%	—	75%	—
<b>Totals</b>	<b>345</b>	<b>1</b>	<b>28</b>	<b>66</b>	<b>143</b>	<b>64</b>	<b>29</b>
						<b>11</b>	<b>3%</b>
						<b>0%</b>	<b>2</b>
							<b>1%</b>

STEAK PIES AND STEAK AND KIDNEY PIES  
(minced meat or solid filling)

Table C (1)

Price per 100 grams	No. of Samples	Percentage Meat Content									
		10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
3d.-5d.	25	2 8%	4 16%	6 24%	7 28%	8 2%	12 3%	4 4%	—	—	—
5d.-7d.	82	2 2.4%	7 20.7%	19 23.2%	25 30.5%	8 9.8%	6 7.3%	4 4.9%	1 1.2%	—	—
7d.-9d.	34	3 8.8%	7 20.5%	6 17.6%	7 20.5%	2 5.9%	4 11.8%	4 11.8%	—	—	2.9%
Over 9d.	6	—	2 33.3%	1 16.6%	—	1 16.6%	—	—	—	1 16.6%	1 16.6%
<b>Totals</b>	<b>147</b>	<b>7 5%</b>	<b>30 20%</b>	<b>32 22%</b>	<b>39 26%</b>	<b>13 9%</b>	<b>13 9%</b>	<b>9 1%</b>	<b>1 1%</b>	<b>2 1%</b>	

STEAK PIES AND STEAK AND KIDNEY PIES  
(minced meat or solid filling)

Table C (2)

Weight of pie grams	No. of Samples	Percentage Meat Coated						55-60
		10-15	15-20	20-25	25-30	30-35	35-40	
50-100	8	37.5%	4%	—	12.5%	—	—	—
100-150	45	4.4%	2%	17.8%	8%	35.5%	6.6%	4.4%
150-200	49	1	14	12	10	6	4	2
200-250	10	—	10%	20%	30%	10%	20%	4.1%
250-300	2	—	50%	50%	—	—	—	—
300-350	—	—	—	—	—	—	—	—
350-400	4	—	1	—	—	25%	1	25%
400-450	1	—	—	100%	—	—	—	—
450-500	5	—	1	—	20%	—	2	—
over 500	2	—	—	50%	—	—	50%	20%
Totals	126	5%	30%	24%	25%	31%	8%	1%
							8%	2%

MEAT PIES AND STEAK AND KIDNEY PIES  
(discrete pieces of meat without gravy)

Table D (1)

Price per 100 grams	No. of Samples	Percentage Meat Content										
		10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65
3d.-5d.	30	—	16·6%	10%	30%	26·6%	6·6%	10%	3	—	—	—
5d.-7d.	126	11	19	28	27	21·4%	17·5%	7·1%	2·3%	3·2%	0·8%	2·6%
7d.-9d.	71	5·6%	12·7%	12·7%	9	21·1%	12·7%	12·7%	9	5·6%	1·4%	2·8%
over 9d.	49	—	10·2%	12·2%	6	28·6%	6·1%	14·3%	7	—	6·1%	2%
<b>Totals</b>	<b>276</b>	<b>15</b>	<b>38</b>	<b>46</b>	<b>65</b>	<b>42</b>	<b>27</b>	<b>22</b>	<b>8</b>	<b>5</b>	<b>6</b>	<b>1</b>
											0%	0%

MEAT PIES AND STEAK AND KIDNEY PIES  
(discrete pieces of meat without gravy)

Table D (2)

Weight of pie in grams	No. of samples	Percentage Meat Content							
		10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
below 50	1	—	—	—	—	—	—	—	—
50-100	29	2 6.9%	6 20.7%	6 20.7%	7 24.1%	2 6.9%	2 6.9%	1 3.4%	1 3.4%
100-150	86	6 7%	16 18.6%	12 14%	14 16.3%	14 14%	7 8.1%	10 11.6%	5 5.8%
150-200	80	6 7.5%	14 17.5%	16 20%	18 22.5%	14 17.5%	5 6.2%	4 5%	—
200-250	26	1 3.8%	1 3.8%	2 7.6%	8 30.8%	7 26.9%	3 11.4%	2 7.6%	2 7.6%
250-300	6	—	—	1 16.6%	1 16.6%	—	1 16.6%	2 33.3%	—
300-350	10	2 20%	—	1 10%	2 20%	1 10%	1 10%	—	2 20%
350-400	3	—	—	1 33.3%	—	1 33.3%	1 33.3%	—	—
400-450	4	—	—	1 25%	—	1 25%	1 25%	—	—
450-500	8	—	—	2 25%	3 37.5%	2 25%	1 12.5%	—	—
500-550	4	—	—	—	1 25%	1 25%	2 50%	—	—
over 550	3	—	—	—	1 33.3%	—	—	1 33.3%	—
Totals	260	17 6%	38 15%	42 17%	56 22%	41 16%	24 9%	8 3%	5 2%
								1 0%	1 0%

MEAT PIES AND STEAK AND KIDNEY PIES  
(discrete pieces of meat with gravy)

Table E (1)

Appendix I

Price per 100 grams	No. of Samples	Percentage Meat Content										
		below 10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
3d.-5d.	39	2 5.1%	11 28.2%	10 25.6%	10 25.6%	4 10.3%	2 5.1%	—	—	—	—	—
5d.-7d.	98	2 2%	6 6.1%	22 22.4%	39 39.8%	14 14.3%	12 12.2%	2 2%	1 1%	—	—	—
7d.-9d.	28	—	1 3.6%	4 14.3%	3 10.7%	10 35.7%	2 7.2%	6 21.4%	2 7.2%	—	—	—
over 9d.	25	1 4%	3 12%	3 12%	4 16%	8 32%	—	2 8%	1 4%	1 4%	—	4% - 1%
<b>Totals</b>	<b>190</b>	<b>5 3%</b>	<b>21 11%</b>	<b>39 20%</b>	<b>56 29%</b>	<b>36 19%</b>	<b>16 8%</b>	<b>10 5%</b>	<b>4 2%</b>	<b>1 1%</b>	<b>—</b>	<b>1 1%</b>

MEAT PIES AND STEAK AND KIDNEY PIES  
(discrete pieces of meat with gravy)

Table E (2)

Weight of pie grams	No. of Samples	Percentage Meat Content										over 80
		below 10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	
40-50	2	—	1	1	—	—	—	—	—	—	—	—
50-100	2	—	50%	50%	—	—	—	—	—	—	—	—
100-150	51	6	11.8%	11.8%	29.4%	15	10	6	3.9%	9.8%	1.9%	—
150-200	77	1	1.3%	9.1%	14.3%	11	32	10	10	2	1.3%	—
200-250	16	1	6.2%	—	31.2%	12.6%	25.1%	4	3	—	—	6.2%
250-300	4	—	—	—	25%	1	25%	—	—	—	—	—
300-350	1	—	—	—	100%	—	—	—	—	—	—	—
350-400	3	—	—	—	—	—	—	—	—	—	—	—
400-450	6	—	—	—	—	4	1	—	—	—	—	—
450-500	5	—	—	—	—	66.6%	16.7%	—	16.7%	—	—	—
500-550	3	—	—	—	—	33.3%	66.6%	2	—	—	—	—
over 550	3	—	—	—	—	33.3%	33.3%	1	33.3%	—	—	—
Totals	173	8	16	33	51	31	17	9	4	1	—	1%
		5%	9%	19%	29%	18%	10%	5%	2%	1%	—	1%

BEEF PIES OR MEAT PIES (MEAT UNSPECIFIED)  
(minced meat filling)

Table F (1)

Appendix I

Price per 100 grams	No. of Samples	Percentage Meat Content						
		below 10	10-15	15-20	20-25	25-30	30-35	35-40
3d.-5d.	200	11 5.5%	60 30%	55 27.5%	50 25%	21 10.5%	2 1%	1 0.5%
5d.-7d.	410	20 4.9%	86 21%	160 34.1%	101 24.6%	43 10.5%	15 3.6%	2 0.4%
7d.-9d.	59	2 3.4%	6 10.2%	20 33.9%	16 27.1%	9 15.3%	2 3.4%	2 3.4%
over 9d.	12	—	—	7 58.3%	1 8.3%	2 16.6%	1 8.3%	1 8.3%
Totals	681	33 5%	152 22%	222 33%	168 25%	75 11%	20 3%	6 1%
							3 0%	2 0%

BEFF PIES OR MEAT PIES (MEAT UNSPECIFIED)  
(minced meat filling)

Table F (2)

Weight of pie grams	No. of Samples	Percentage Meat Content								
		below 10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
below 50	8	2 <sup>2</sup> 25%	—	37 <sup>3</sup> 3%	—	2 <sup>5</sup> 25%	12-5%	—	—	—
50-100	200	13 <sup>4</sup> 6-5%	23-47 <sup>5</sup> 23-5%	73 <sup>6</sup> 36-5%	44 <sup>7</sup> 22%	15 <sup>8</sup> 7-5%	5 <sup>9</sup> 2-5%	2 <sup>10</sup> 1%	0-5%	—
100-150	447	19 <sup>11</sup> 4-2%	104 <sup>12</sup> 23-2%	143 <sup>13</sup> 32%	112 <sup>14</sup> 25-1%	51 <sup>15</sup> 11-4%	11 <sup>16</sup> 2-5%	4 <sup>17</sup> 0-9%	2 <sup>18</sup> 0-4%	0-2%
150-200	30	1 <sup>19</sup> 3-3%	13-4 <sup>20</sup> 13-3%	7 <sup>21</sup> 23-3%	13 <sup>22</sup> 43-3%	4 <sup>23</sup> 13-3%	1 <sup>24</sup> 3-3%	—	—	—
200-250	13	—	23-1 <sup>25</sup> 23-1%	23-1 <sup>26</sup> 33-1%	30-7 <sup>27</sup> 33-1%	7-7 <sup>28</sup> 16-6%	1 <sup>29</sup> 16-6%	2 <sup>30</sup> —	—	—
250-300	6	—	16-6 <sup>31</sup> 16-6%	33-1 <sup>32</sup> 33-1%	1 <sup>33</sup> 16-6%	1 <sup>34</sup> 16-6%	—	—	—	16-6%
300-350	2	—	1 <sup>35</sup> 30%	1 <sup>36</sup> 50%	—	—	—	—	—	—
350-400	1	—	—	1 <sup>37</sup> 100%	—	—	—	—	—	—
400-450	—	—	—	—	—	—	—	—	—	—
450-500	1	—	—	—	—	1 <sup>38</sup> 100%	—	—	—	—
<b>Total</b>	<b>708</b>	<b>35</b> <b>5%</b>	<b>160</b> <b>23%</b>	<b>233</b> <b>32%</b>	<b>174</b> <b>25%</b>	<b>75</b> <b>11%</b>	<b>20</b> <b>3%</b>	<b>6</b> <b>1%</b>	<b>5</b> <b>0%</b>	<b>2</b> <b>0%</b>

RESULTS FROM 18 SAMPLES OF PASTRY  
USED FOR PIE MAKING

\*Assuming Flour contains 69.4 per cent Carbs.

Sample No.	1 A <sub>eq.</sub>	2 Ash	3 Fat	4 N	5 Protein N x 6-25	6 Carbs. by dilut.	7 Carbs. by dilut.	8 Protein N x 5-7	9 Carbs. by dilut.	10 N per 100 pts. carbs. from column 7	11 Fat per 100 parts cards.	12 Fat per 100 parts cards.	13* Flour from column 9	14 Fat per 100 parts Flour	15 Fat oz. per lb. Flour
1	22.5	0.8	26.8	1.153	7.2	42.7	6.6	43.3	2.70	62.8	61.9	62.4	42.9	6.9	
2	23.7	1.3	25.8	1.141	7.1	42.1	6.5	42.7	2.71	61.3	60.4	61.5	42.0	6.7	
3	28.4	0.6	21.9	1.193	7.5	41.6	6.8	42.3	2.87	52.6	51.8	61.0	35.9	5.7	
4	22.3	1.4	28.9	1.213	7.6	39.8	6.9	40.5	3.05	72.6	71.4	58.4	49.4	7.9	
5	21.1	1.6	28.3	1.313	8.2	40.8	7.5	41.5	3.22	69.4	68.2	59.8	47.3	7.6	
6	30.0	0.7	23.7	1.161	7.3	38.3	6.6	39.0	3.03	61.9	60.8	56.2	42.2	6.8	
7	23.0	1.4	25.6	1.308	8.2	41.8	7.5	42.5	3.13	61.2	60.2	61.2	41.8	6.7	
8	18.9	1.0	29.3	1.288	8.1	42.7	7.3	43.5	3.02	68.6	67.4	62.7	46.7	7.5	
9	23.4	1.2	26.2	1.152	7.2	42.0	6.6	42.6	2.74	62.4	61.5	61.4	42.7	6.8	
10	22.6	0.9	26.3	1.146	7.2	43.0	6.5	43.7	2.67	61.2	60.2	63.0	41.7	6.7	
11	24.1	1.4	26.4	1.160	7.3	40.8	6.6	41.5	2.84	64.7	63.6	59.8	44.1	7.1	
12	21.2	1.7	30.1	0.963	6.0	41.0	5.5	41.5	2.35	73.4	72.5	59.8	50.3	8.0	
13	17.6	1.6	29.1	1.313	8.2	43.5	7.5	44.2	3.02	66.9	65.8	63.7	45.7	7.3	
14	31.5	1.1	30.0	0.950	6.0	31.4	5.5	31.9	3.06	95.5	94.0	46.0	65.2	10.4	
15	22.5	1.8	25.9	1.121	7.0	42.8	6.4	43.4	2.62	60.5	59.7	62.5	41.4	6.6	
16	20.5	1.3	31.8	1.204	7.5	38.9	6.9	39.5	3.10	81.7	80.5	56.9	55.9	8.9	
17	22.7	2.4	23.9	1.026	6.4	44.6	5.8	45.2	2.30	53.6	52.9	63.1	36.7	5.9	
18	19.1	1.6	26.0	1.187	7.4	45.9	6.8	46.5	2.59	56.6	55.9	67.0	38.8	6.2	

Footnote: In the conversion of nitrogen to protein two factors have been used: 6.25 which is the usual conversion factor in the United Kingdom and 5.7 which is being increasingly adopted particularly in Europe.

### APPENDIX III

*List of those who have given evidence or have been consulted*

- \*Association of County Councils in Scotland
- Association of Municipal Corporations
- Association of Public Analysts
- Association of Public Analysts of Scotland
- Association of Sea and Air Port Health Authorities
- Cornwall County Council
- \*Convention of Royal Burghs of Scotland
- \*Counties of Cities Association
- County Councils' Association
- Institute of Weights and Measures Administration
- Metropolitan Boroughs' Standing Joint Committee
- Rural District Councils' Association
- Urban District Councils' Association
- \*City Analysts of Edinburgh and Glasgow
  
- Association of Multiple Retail Meat Traders
- British Hotels and Restaurants Association—Small Consultative Committee
- \*Caterers' Association of Great Britain
- \*Food Manufacturers' Federation Incorporated
- \*National Association of Master Bakers, Confectioners and Caterers
- National Association of Multiple Grocers
- National Caterers' Federation
- \*National Federation of Meat Traders' Associations Incorporated
- Parliamentary Committee of the Co-operative Union
- \*Scottish Advisory Committee of the Caterers' Association of Great Britain
- \*Scottish Association of Master Bakers
- Scottish Association of Sausage and Cooked Meat Manufacturers
- \*Scottish Federation of Meat Traders' Associations
- Scottish Pork Butchers' Association
- Wholesale and Retail Bakers of Scotland
  
- Cornwall Federation of Women's Institutes
- \*Scottish Women's Rural Institute

\*Also gave oral evidence

Printed in England by The North Western Printers Ltd.,  
and published by HER MAJESTY'S STATIONERY OFFICE